REMARKS

In order to expedite prosecution by reducing issues, a personal interview with Examiner Whitmore was conducted on April 20, 2005. Applicants and Applicants' representative would like to thank Examiner Whitmore for his courtesy in conducting the interview and for his assistance in resolving issues. The following is a summary of the interview discussion.

Regarding the objection to the drawings, it was noted that the objection was based on the informal drawings filed with the application. However, formal drawings were filed on March 5, 2005 which obviates the Examiner's concerns. Accordingly, it is respectfully requested that the objection to the drawings be withdrawn.

Claims 1 and 13 are the sole independent claims and stand rejected under 35 U.S.C. § 102 as being anticipated by Smith et al. '875 ("Smith"). This rejection is respectfully traversed for the following reasons.

During the interview, Applicants' representative traversed the pending rejection by arguing that Smith does not disclose or suggest the dummy fill being performed based on the most appropriate area. In contrast, as expressly disclosed in Figure 18 (step 35), Smith performs the dummy fill based on film thickness and electrical parameters. The Examiner indicated that the calculated pattern densities used during the dummy fill process inherently would result in a most appropriate area. However, the calculated pattern densities are not parameters by which the dummy fill amount is determined. Rather, the pattern densities are simply real-time calculations *during the dummy fill process* used to indicate the ratio of metal to non-metal currently existing

in the pattern. Smith does not suggest that the dummy fill process is designed to reach a desired pattern density.

Indeed, Smith expressly discloses that pattern "density is defined as the amount of metal divided by the total area within a given region [such that] adding oxide dummy ... *decreases* the pattern density" (emphasis added; paragraph [0006]). In this regard, as shown in Figures 1A,B of Smith, the dummy fill simply changes the thickness of the respective pattern rather than the area thereof (this is consistent with the control variables discussed above and shown in Figure 18, step 35 of Smith; i.e., film thickness and electrical parameters). Accordingly, the pattern density of Smith is completely unrelated to area in terms of definition, as well as its use as an "indicator" in the dummy fill process. In this regard, according to the present invention, placement of *either* dummy oxide and metal would *increase* the area occupied by a pattern, where such placement is geared towards reaching a desired area ratio (i.e., most appropriate area ratio).

Although the Examiner's interpretation that the final layout of Smith would inherently have a most appropriate area is traversed because, as discussed above, Smith does not perform the dummy fill according to a desired area ratio; independent claims 1 and 13 have been amended to emphasize the affirmative step of the present invention in determining a most appropriate area as a parameter by which the dummy fill processing is effected.

Claim 1 (claim 13 recites similar limitation) recites in pertinent part, "a step of determining a most appropriate area ratio of the layout pattern of the layer according to a design rule of the layer composing the layout pattern." Accordingly, even assuming *arguendo* that the process of Smith would inherently result in a desired pattern density with such density being

related to area, Smith does not disclose or suggest the affirmative step of determining that desired area as a parameter by which the dummy fill is effected.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities", *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the forgoing, it is submitted that Smith does not anticipate claims 1 and 13, nor any claim dependent thereon.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claims 1 and 13 are patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejection under 35 U.S.C. § 102 be withdrawn.

CONCLUSION

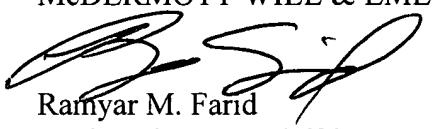
Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's

amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



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